

FARADAY STRUCTURED WAVEGUIDE DISPLAY

ABSTRACT OF DISCLOSURE

[88] Disclosed is an apparatus and method for an alternative display technology that offers advantages of the prior art while reducing cost and improving performance of flat panel displays and projection systems, the apparatus and method including a display assembly including a radiation source and a plurality of waveguide modulators arranged with output ports forming a desired pixel arrangement, each modulator having a mechanism for controllably influencing one or more predetermined properties of radiation transported through waveguides to modulate an emitted intensity. The display assembly includes a plurality of radiation wave modulators, each modulator having a first element for producing a wave component from a radiation wave, said wave component having a polarization property wherein said polarization property is one of a set of orthogonal polarizations; an optical transport for receiving said wave component; a transport influencer, operatively coupled to said optical transport, for affecting said polarization property of said wave component responsive to a control signal; and a second element for interacting with said affected wave component wherein an intensity of said wave component is varied responsive to said control signal with the assembly further including a radiation source for producing said radiation wave for each said modulator; and a controller, coupled to said modulators, for selectively asserting each said control signal to independently control said intensity of each said modulator. The display method includes producing a radiation wave for each of a plurality of modulators, each modulator having a first element for producing a wave component from said radiation wave, said wave component having a polarization property wherein said polarization property is one of a set of orthogonal polarizations; an optical transport for receiving said wave component; a transport influencer, operatively coupled to said optical transport, for affecting said polarization property of said wave component responsive to a control signal; and a second element for interacting with said affected wave component wherein an intensity of said wave component is varied responsive to said control signal; and the method further including asserting selectively each said control signal to independently control said intensity of each said modulator.